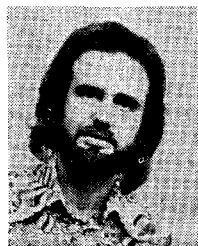


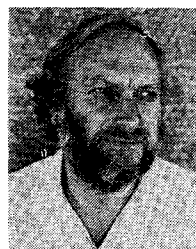
Contributors



John W. Bandler (S'66-M'66-SM'74) was born in Jerusalem, Palestine, on November 9, 1941. He received the B.Sc. (Eng.) and Ph.D. degrees, both in electrical engineering, from the University of London, Imperial College, London, England, in 1963 and 1967, respectively.

He joined Mullard Research Laboratories, Redhill, Surrey, England in 1966. From 1967 to 1969 he was a Postdoctorate Fellow and Sessional Lecturer at the University of Manitoba, Winnipeg, Canada. He became Assistant Professor in 1969, Associate Professor in 1971, and Professor in 1974 in the Department of Electrical Engineering at McMaster University, Hamilton, Ont., Canada. He is Coordinator of the Research Group on Simulation, Optimization and Control. He is a contributor to *Modern Filter Theory and Design*, G.C. Temes and S.K. Mitra, Ed., Wiley-Interscience, 1973. He is author or coauthor of four papers appearing in *Computer-Aided Filter Design*, G. Szentirmai, Ed., IEEE Press, 1973. He was an Associate Editor of the IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES (1969-1974). He was Guest Editor of the Special Issue of the IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES on Computer-Oriented Microwave Practices, March 1974.

Dr. Bandler is a member of the Institution of Electrical Engineers (Great Britain) and a member of the Association of Professional Engineers of the Province of Ontario (Canada).



R. H. T. Bates (M'60) was born in Sheffield, England, on July 8, 1929. He received the B.Sc. (Eng.) and D.Sc. (Eng.) degrees in electrical engineering from the University of London, London, England, in 1952 and 1972, respectively.

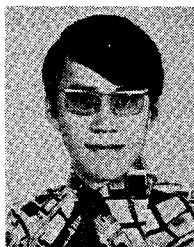
He has worked on a number of academic and industrial aspects of applied electromagnetics. His other interests include image processing, astronomical information retrieval, medical engineering, and the application of the digital computer to system modeling and to the development of heuristics for musicianship aids and the game of chess. From 1952 to 1955 he was with the guided-missile section of Vickers-Armstrong, Weybridge, England; from 1955 to 1957 he was with the aerial section of Decca Radar, Tolworth, England; and from 1957 to 1960 he worked on antenna development with the Air Armament Department, Canadian Westinghouse, Hamilton, Canada. He was a Radar and Communications Systems Engineer from 1960 to 1966, with National Company, Malden, Mass., Mitre Corporation, Bedford, Mass., Sperry Rand Research Center, Sudbury, Mass. In 1967 he joined the Department of Electrical Engineering, University of Canterbury, Christchurch, New Zealand, where he is now Reader in Electrical Engineering. In 1970 he visited Scandinavia, the United Kingdom, and the United States on a grant from the Erskine Foundation of the University of Canterbury. During the academic year 1973-1974 he was a Senior Visiting Fellow in Electrical Engineering at the Imperial College of Science and Technology, London, England.

Dr. Bates is a fellow of the Institution of Electrical Engineers (London). He reviews regularly for IEEE journals and is an Editorial Review Board member for the IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES. He is Editor of the *Canterbury Engineering Journal*.



Morris E. Brodwin (A'49-M'55-SM'68) was born in New York, N.Y., on July 14, 1924. He received both the M.S. and Dr.Sc. degrees from Johns Hopkins University, Baltimore, Md., in 1951 and 1957, respectively.

While at the University he pursued studies in ferrites and was a Research Scientist in the Radiation Laboratory. In 1958 he became a member of the faculty of Northwestern University, Evanston, Ill., where he is now Professor of Microwave Physics in the Department of Electrical Engineering. His current research areas include the microwave diagnostics of plasmas and semiconductors, and the biological effects of nonionizing radiation.



James H. K. Chen (S'74) was born in Amoy, China on November 22, 1947. He received the B.Eng. and M.Eng. degrees in electrical engineering from McMaster University, Hamilton, Ont., Canada, in 1972 and 1974, respectively. He held a Scholarship from the National Research Council of Canada.

He is currently a member of the scientific staff at Bell-Northern Research, Ottawa, Ont., Canada.



Marvin Cohn (S'49-A'51-M'57-SM'61-F'74) was born in Chicago, Ill., on September 25, 1928. He received the B.S.E.E. and M.S.E.E. degrees from the Illinois Institute of Technology, Chicago, in 1950 and 1953, respectively. In 1960 he received the Dr. Eng. degree from The Johns Hopkins University, Baltimore, Md.

He was with the Glenn L. Martin Company, Baltimore, from 1951 to 1952. He was with the Radiation Laboratory of The Johns Hopkins University from 1953 to 1960, except for a two-year period in the U.S. Army Signal Corps at White Sand Proving Ground, N. M. At the Radiation Laboratory he did research and development work on low-noise microwave and millimeter wave receiver techniques and on surface wave transmission and was Head of the Millimeter Wave Techniques Group. In 1960 he accepted the position of Research Scientist at the Research Division of Electronic Communications, Inc., Timonium, Md. (which became Advanced Technology Corporation in 1964) and subsequently was appointed Vice President of Engineering. He participated in and supervised programs on semiconductor and ferroelectric devices, surface wave excitation and transmission, microwave and millimeter wave radiometric components, techniques and systems. In 1969 he became Head of the Microwave Physics Group at the Westinghouse Systems Development Division, Baltimore, Md., where he supervises a group engaged in the development of solid-state devices, low-noise mixers and parametric amplifiers, microwave integrated circuits, and millimeter wave components.

Dr. Cohn is a past member and Secretary-Treasurer of the S-MTT Administrative Committee. He is a member of Eta Kappa Nu, Tau Beta Pi, and Sigma Xi.



James E. Degenford (S'59-M'64) was born in Bloomington, Ill., on June 11, 1938. He received the B.S., M.S., and Ph.D. degrees in electrical engineering from the University of Illinois, Urbana, in 1960, 1961, and 1964, respectively.

While a graduate student, he was associated with the Ultramicrowave Group at the University of Illinois, doing research in the fields of millimeter and submillimeter wave transmission systems and detection techniques.

In 1964 he was appointed Research Associate in Electrical Engineering at the University of Illinois. In 1965 he joined the Westinghouse Electric Corporation, Baltimore, Md., where he is currently employed as a Fellow Engineer in the Microwave Physics Group working in the areas of microwave integrated circuits, low-noise mixers, and solid-state sources.

Dr. Degenford is Chairman of the Baltimore MTT Chapter and Secretary-Treasurer of the S-MTT Administrative Committee. He is listed in *American Men of Science* and is a member of Sigma Xi, Tau Beta Pi, Eta Kappa Nu, and Sigma Tau.



Brian Easter was born in Chelmsford, Essex, England, in 1924. He studied at University College, London, England, and Chelsea Polytechnic, London, England, and was awarded the B.Sc. (Eng.) and M.Sc. degrees by the University of London, London, England, in 1945 and 1951, respectively.

From 1944 to 1947 he was employed by Marconi's Wireless Telegraph Company, Ltd., working on high-frequency communication receivers. From 1948 to 1965 he was

employed at the Hirst Research Centre of the General Electric Company at Wembley, and was mainly concerned with problems in the development of microwave radio-relay systems. Since 1965 he has been a member of the academic staff of the School of Electronic Engineering Science, University College of North Wales, Bangor, Caerns., Wales. His recent interests have centered on passive microwave circuits including microstrip transmission lines and circuits.



Anand Gopinath (S'64-M'65) received the B.E. degree from Madras University, Madras, India, the M.Tech. degree from the Indian Institute of Technology, Kharagpur, India, and the Ph.D. degree from Sheffield University, Sheffield, England.

He was a Graduate Apprentice with A.E.I. (Manchester) Ltd., Manchester, and then worked as Engineer with Jessop & Company, Ltd., Calcutta. Since obtaining his Ph.D. in 1965, he was, at first, Research Assistant at

Sheffield University, and then became Lecturer in Electronics at the University College of North Wales, Bangor, Caerns., Wales, in 1966. He also spent most of 1971 while on leave of absence from Bangor, at McGill University, Montreal, Canada. He originally worked in the

heavy-current area, but over the past twelve years his interests have been, and are currently, in microwaves and solid-state devices. He has contributed several papers on various aspects of microstrip lines and microwave integrated circuits, and is active in this area. He also directs a research group which operates a scanning electron microscope in the stroboscopic mode up to 9 GHz for dynamic device studies and this has enabled Gunn domains to be observed in X-band devices. His current interests are in some of the remaining theoretical problems of microstrip lines and in integrated optical guides, also in various aspects of Gunn devices and GaAs FET devices, and in the limitations of very high speed bipolar logic.

Dr. Gopinath is a member of the Institution of Electrical Engineers, London, graduate member of the Institution of Mechanical Engineers, London, and also a member of Sigma Xi.

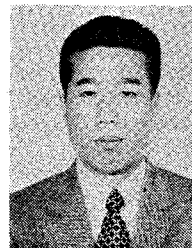


Hidehiko Katoh was born in Gifu, Japan, on January 19, 1941. He received the B.S. degree in physics from Kyoto University, Kyoto, Japan, in 1963.

In 1963 he joined the Central Research Laboratories, Nippon Electric Co., Ltd., Kawasaki, Japan. Since then he has been engaged in the research and development of microwave components and integrated circuits such as strip-transmission lines, thin-film lumped-elements, filters, and transistor

amplifiers. He is currently working on ferrite devices, especially on lumped-element circulators and edge-guided mode isolators.

Mr. Katoh is a member of the Institute of Electronics and Communication Engineers of Japan.



Katsuhiro Kimura was born in Tokyo, Japan, on November 11, 1937. He graduated from the Koishikawa Technical High School, Tokyo, in 1956.

In 1956 he joined the Central Research Laboratory, Hitachi, Ltd., Tokyo. Since then he has been engaged in the development of millimeter-wave electron tubes, Gunn and IMPATT oscillators. He has been especially interested in the stabilization of solid-state oscillators. He is currently working on X-

band low-noise receivers for satellite signals.

Mr. Kimura is a member of the Institute of Electronics and Communication Engineers of Japan.



Hiroshi Kadera was born in Fukuoka, Japan, on October 3, 1934. He received the B.Sc. and Ph.D. degrees in physics from the University of Tokyo, Tokyo, Japan, in 1957 and 1972, respectively.

After joining the Central Research Laboratory, Hitachi, Ltd., Tokyo, in 1957, he has been working in the various fields of semiconductors. Recently his main interest is in the device design theory and he has contributed to the development of microwave

semiconductor devices. Presently, he is supervising a group responsible for the design of semiconductor devices and developmental work of GaAs FET's.

Dr. Koderia is a member of the Physical Society of Japan, Japan Society of Applied Physics, and the Institute of Electronics and Communication Engineers of Japan.



Peter C. Liu (S'71-M'69-S'74) was born in Canton, China, on September 22, 1942. He received the B.Sc. and M.Sc. degrees, both in electrical engineering, in 1969 and 1971, respectively, from the University of Manitoba, Winnipeg, Man., Canada. He received the Ph.D. degree in electrical engineering from McMaster University, Hamilton, Ont., Canada, in 1975.

He is now with Bell-Northern Research, Verdun, P.Q., Canada.



Minoru Maeda (M'70) was born in Kanagawa, Japan, on December 22, 1942. He received the B.S. and M.S. degrees in electrical engineering from Yokohama National University, Yokohama, Japan, in 1965 and 1967, respectively, and the D.Eng. degree from the Tokyo Institute of Technology, Tokyo, Japan, in 1975.

He joined the Central Research Laboratory, Hitachi, Ltd., Tokyo, in 1967. He has since been engaged in research and development on millimeter-wave parametric amplifiers, microwave integrated circuits, and lumped-element circulators, and has worked on microwave application of GaAs FET's. He is presently concerned with optical devices for fiber transmission systems.

Dr. Maeda is a member of the Institute of Electronics and Communication Engineers of Japan.



Burton A. Newman (S'71-M'72) was born in Chicago, Ill., on August 11, 1947. He received the B.S. degree in physics from the University of Illinois, Chicago, in 1969 and the M.S. degree in electrical engineering from Washington University, St. Louis, Mo., in 1972.

He is currently employed by the Westinghouse Electric Corporation, Baltimore, Md., as a Senior Engineer in the Microwave Physics Group, Systems Development Division. His work is involved with the advanced development of solid-state microwave circuits and millimeter subsystems.



Amedeo Premoli was born in Crema, Italy, on March 3, 1942. He received the degrees in electrical engineering from the Politecnico di Torino, Turin, Italy, in 1965.



Since 1966 he has been with the Istituto Elettrotecnico Nazionale Galileo Ferraris, Turin, Italy. His interests are in the field of the circuit theory, in particular on distributed networks, microstrips, filtering transmission functions and *RC* active filters. From 1966 to 1972 he was also part-time Assistant Professor at the Politecnico di Torino.



J. David Rhodes (M'67) was born in Doncaster, Yorks., England, on October 9, 1943. He received the B.Sc., Ph.D., and D.Sc. degrees in electrical engineering from the University of Leeds, Leeds, England, in 1964, 1966, and 1974, respectively.

From 1966 to 1967 he was a Research Fellow in the Department of Electrical and Electronic Engineering at the University of Leeds, and then joined Microwave Development Laboratories Inc., Natick, Mass., as a Senior Research Engineer. He is currently a Professor at the University of Leeds and also Consultant in microwave engineering to Microwave Development Laboratories, U.S.A., and Ferranti Ltd., Great Britain. In 1969 he was awarded the "Microwave Prize" by the IEEE Microwave Theory and Techniques Society, in 1970, the IEEE Browder J. Thompson Award, and J. J. Thompson Award from the Institution of Electrical Engineers, London, in both 1971 and 1973, and the Guillemin-Cauer Award by the Circuits and Systems Society in 1974.



Allen Taflove was born in Chicago, Ill., on June 14, 1949. He received both the B.S. degree, with highest distinction, in electrical engineering, and the M.S. degree from Northwestern University, Evanston, Ill., in 1971 and 1972, respectively. He is now completing his doctoral dissertation as a Cabell Fellow at Northwestern.

His research involves the numerical analysis of the heating of complex human body organs by microwave irradiation. In particular, he has developed computer programs for microwave scattering and heat conduction within the eye and its surrounding bony orbit.

Mr. Taflove is a member of Tau Beta Pi and Eta Kappa Nu, and is an associate member of Sigma Xi.



Yoichiro Takayama (M'72) was born in Kanagawa, Japan, on January 3, 1942. He received the B.E., M.E., and Dr. Eng. degrees from Osaka University, Osaka, Japan, in 1965, 1967, and 1973, respectively.

He joined the Nippon Electric Company, Ltd., Kawasaki, Japan,



in 1967 and is now a Research Member of the Electron Device Research Laboratory, Central Research Laboratories. He has been engaged in the research and development of microwave semiconductor devices, and his latest interests include IMPATT diode characterization and GaAs FET devices.

Dr. Takayama is a member of the Institute of Electronics and Communication Engineers of Japan.



Alistair F. Thomson was born in Alloa, Clackmananshire, Scotland, on September 7, 1950. He received the B.Sc. degree in electrical engineering from the University of Strathclyde, Glasgow, Scotland in 1972. In 1973 he received the M.Sc. degree in control from the University College of North Wales, Bangor, Cares., Wales. He is currently working towards his Ph.D. degree in electrical engineering at the University of North Wales.
